REMARKS

STATUS OF THE CLAIMS

In accordance with the foregoing, claims 1-3 and 7-10 are amended. It is respectfully submitted that claims 1-20 are pending and under consideration.

No new matter is being presented and reconsideration is requested.

I. REJECTIONS UNDER 35 U.S.C. §102(e)

Claims 1-3, 6 and 7

On page 2-4 of the Office Action, claims 1-3, 6 and 7 are rejected under 35 U.S.C. §102(e) as being anticipated by Kang (U.S. Patent No. 6,400,347). The rejections are respectfully traversed and reconsideration is requested.

The Examiner states that Kang teaches a plasma display with a drive unit that monitors a display load factor, receives image signals of said different colors and drives pixels of each colors in the panel according to intensities of the image signals so as to have the pixels emit light with emission intensities corresponding to the intensities of the image signals, while controlling to decrease a drive frequency of the sustain discharge as the display load factor increases, citing column 4, lines 40-60.

Furthermore, the Examiner interprets "load factor" as the number of activated pixels of the R, B, G color signals and argues that it is directly related to power consumption and brightness. Thus, the Examiner states that "measuring brightness," as disclosed by Kang, is equivalent to "monitoring the display load factor," within the context of the present invention.

However, column 4, lines 40-60 of Kang does not disclose the foregoing features. In Kang, the brightness of each of R, G and B and the color coordinates are measured in every sub-field SF1 to SF8. These initial measurements are taken probably before shipping the panel. The number of the sustain pulses of R:G:B ratio required in good white balance is calculated, and the calculated value is input to an external microprocessor 20, which outputs a control signal to a sustain pulse generator 32. (See column 6, lines 20-28). If all of the sustain pulses of a specific color are applied according to the R:G:B ratio calculated from each sub-field, the sustain pulse generator 32 and the address driver 50 apply erase pulses103 and 104. (See column 6, lines 47-55).

In contrast to Kang, the plasma display panel of the present invention has a dive unit that *monitors* a display load factor. The display load factor is a ratio of the display load which

depends on luminance and/or display area of a display image, where (1) when 256 grayscales, which is the maximum grayscale, of white is displayed on the entire display screen, the display load factor is 100%, (2) the display load factor decreases as the ratio of white to black in the display screen decreases, and (3) the display load factor decreases as the grayscale value of white decreases even if the ratio of the white to black is the same.

The drive unit controls to decrease a drive frequency of sustain discharges, as the monitored display load factor increases. The drive unit makes a correction to change an intensity of one of the image signals of a *predetermined* color depending on a change of the monitored display load factor.

Generally, in a case where the drive frequency is controlled to be lowered as the display load factor increases, the white balance can not be maintained due to the fluorescent substance characteristics, as shown in Fig. 4. One of the many advantages of the present invention is that the drive unit *monitors* the display load factor in order to correct the intensity of the image signals to maintain the white display in the same condition.

Claims 1-3 recite, in relevant part:

> ...a drive unit which monitors a display load factor, receives an image signal of said different colors and drives pixels of each of the colors in the panel according to intensities of the image signals so as to have the pixels emit light with emission intensities corresponding to the intensities of the image signals, while controlling to decrease a drive frequency of sustain discharges as the monitored display load factor increases, said drive frequency of sustain discharges being in common to said pixels for different colors...

Therefore, in light of the foregoing arguments, it is respectfully submitted that claims 1-3 patentably distinguish over Kang. Claim 6 depends from claim 3 and, therefore, inherits the patentable features thereof.

Claim 7 recites, in relevant part:

> ...a driver which monitors a display load factor, which depends on a luminance and/or display area of a display image, repeats a sustain discharge according to a drive frequency, said drive frequency of sustain discharges being in common to said pixels for different colors, and drives pixels of the colors in the panel during a sustain discharge period which corresponds to intensities of input image signals of the colors,
>
> wherein said driver limits a range of the drive frequency within a range in which emitting intensity of the fluorescent substances does not reach to a saturation range so that a chromaticity coordinate value during a white display is roughly constant regardless of the monitored display load factor.

The foregoing arguments are also asserted for claim 7. Therefore, it is respectfully submitted that claim 7 patentably distinguishes over the reference.

Claims 1-3, 11 and 12

On pages 4-6 of the Office Action the Examiner rejects claims 1-3, 11 and 12 under U.S.C. §102(e) as being anticipated by Kasahara et al. (U.S. Patent No. 6,331,843) (hereinafter "Kasahara"). The rejections are respectfully traversed and reconsideration is requested.

Kasahara describes a display apparatus performing weighting for each subfield, outputting a drive pulse of a number N-times this weighting, or outputting a drive pulse of a time length N-times this weighting, and adjusting brightness in accordance with the total drive pulse number in each pixel, or the total drive pulse time. (See column 3, lines 36-42). Further, the apparatus generates a weighting N based on brightness data, multiplying N-times the weight of each subfield based on multiple N, setting a drive pulse number, and setting a drive pulse width. (See column 4, lines 30-41). The weighting multiplier N and a multiplication factor A are increased as an average level of brightness becomes lower to make the image brighter. (See column 23, lines 24-45).

In Kasahara, the emission intensities of all colors are adjusted simultaneously, since all of the different color cells are driven simultaneously by the sustaining driver 22. In contrast, the drive unit of the present invention makes a correction to change an intensity of one of the image signals of a *predetermined* color depending on a change of the monitored display load factor, as recited in claim 1. Therefore, Kasahara does not teach or suggest the features of the present invention, as recited in claim 1.

Claims 2, 3, 11 and 12 include similar patentable recitations as those of claim1, but within different scopes. The arguments for claims 1 are asserted for claims 2, 3, 11 and 12 and, thus, it is respectfully submitted that they too are patentable over the reference.

II. REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 11 and 12

In the Office Action at pages 6-7, claims 11 and 12 are rejected for obviousness under 35 U.S.C. §103(a) as unpatentable over Kang in view of Kasahara. The rejections are respectfully traversed and reconsideration is requested.

Claim 11 recites, in relevant part:

> ...a drive unit, which receives image signals of said different colors, drives pixels

of each of the colors in the plasma display panel according to intensities of the image signals so as to have the pixels emit light with emission intensities corresponding to the intensities of the image signals and changes the drive frequency of sustain discharges according to the estimated display load factor, and changing an intensity of one of the image signals of a predetermined color depending on a change of the estimated display load factor, and driving all of the pixels in the panel according to the corrected intensity of the one image signal, so that a ratio of the emission intensity of each of the different colors during a white display is substantially equal regardless of the estimated display load factor.

The arguments presented above asserting the patentability of independent claim 11 over Kasahara are incorporated herein. As previously set forth, Kasahara does not teach or suggest the drive unit of the present invention makes a correction to change an intensity of one of the image signals of a *predetermined* color depending on a change of the monitored display load factor. In contrast, Kasahara teaches adjusting the emission intensities of all colors simultaneously, since all of the different color cells are driven simultaneously by the sustaining driver 22.

Therefore, it is respectfully submitted that claim 11 is not obvious from Kang in view of Kasahara. Claim 12 depends from claim 11 and inherits the patentable recitations thereof. Thus, claim 12 is also patentable over the references.

Claims 8-10, 13 and 14

In the Office Action, at pages 7-8, claims 8-10, 13 and 14 are rejection for obviousness under 35 U.S.C.§103(a) as being unpatentable over Kang. The rejections are respectfully traversed and reconsideration is requested.

The Examiner recognizes that Kang fails to teach or suggest, "wherein said driver limits a range of the drive frequency so that a color temperature value during a white display is roughly constant regardless of the monitored display load factor which depends on a luminance and/or a display area of a display image," as recited in independent claim 8, and "wherein said driver limits a range of the drive frequency so that a deviation from a color temperature curve denoted by a black body radiation curve during a white display is roughly constant regardless of the monitored display load factor which depends on a luminance and/or a display area of a display image," as recited in independent claim 9.

However, the Examiner asserts that "Kang...obviously implies a chromaticity diagram indicating a variation of color temperature of an energy emitting black body radiation."

The Examiner bears the burden of establishing a prima facie case of obviousness based

upon the prior art..."[the Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." In re Fritch, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992). In addition, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. Id. at 1783-84. However, the Examiner has provided absolutely no motivation to arrive to the presently claimed invention. Rather, unsubstantiated contentions are made to arrive to the recitations of independent claims 8 and 9.

"Rejection of patent application for obviousness under 35 USC §103 must be based on evidence comprehended by language of that section, and search for and analysis of prior art includes evidence relevant to finding of whether there is teaching, motivation, or suggestion to select and combine references relied on as evidence of obviousness; factual inquiry whether to combine references must be thorough and searching, based on objective evidence of record." In re Lee, 61 USPQ2d 1430 (CA FC 2002)

It is improper to merely deem something obvious without any teaching/suggestion, or the taking of Official Notice. "It is fundamental that rejections under 35 U.S.C. §103 must be based on evidence comprehended by the language of that section." See In re Lee, 61 USPQ2d 1430 (CA FC 2002) (citing In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775). If the U.S. Patent and Trademark Office wishes to take Official Notice that the proposed structural and functional modification is notoriously well known, it is respectfully requested that supporting evidence be provided such as a signed Affidavit by the Examiner of record.

Furthermore, claims 13 and 14 depend from claim 11, which patentably distinguishes over the references, as argued above. Therefore, claims 13 and 14 inherit the patentable recitations of claim 11 and, thus, are patentable over Kang.

Claims 4, 5 and 15-20

In the Office Action, at pages 8-9, claims 4, 5 and 15-20 are rejected for obviousness under 35 U.S.C. §103(a) as being unpatentable over Kang in view of Kasahara and Nagai (U.S. Patent No. 2002/10044105). The rejections are respectfully traversed and reconsideration is requested.

Similarly to Kang and Kasahara, Nagai fails to teach or suggest "when the monitored display load factor decreases, said drive unit makes a correction so that an intensity of an image

signal of green is increased or an intensity of the image signal of blue is decreased compared with a case when the monitored display load factor is higher, and drives all of the pixels in the panel according to the corrected intensity of the image signal of green or blue," as recited in claim 3.

Nagai, in combination with Kang and Kasahara, fails to teach or suggest changing, "the drive frequency of sustain discharges according to the estimated display load factor," as recited in independent claim 11.

Claims 4 and 5 depend from claim 3 and inherit the patentable recitations thereof. Likewise, claims 15-20 depend from claim 11 and inherit the patentable recitations thereof. Therefore, it is respectfully submitted that claims 4, 5 and 15-20 patentably distinguish over the references.

III. EXAMINER INTERVIEW SUMMARY

An Examiner interview was conducted on June 29, 2005 to clarify the distinctions between the present invention and the cited references.

Regarding Kang, it was asserted that the reference lacks the monitoring feature, as defined by the present invention, and instead performs white balancing with a one-time adjustment by an external microprocessor. Kang further fails to teach maintaining white balance by decreasing the sustain frequency as the load factor increases.

Regarding Kasahara, it was asserted that the reference teaches measuring brightness and adjusting the intensities of all colors simultaneously. On the other hand, however, the present invention discloses adjusting the intensity of a predetermined color, independently of another color. Further, the reference fails to teach maintaining white balance by decreasing the sustain frequency as the load factor increases.

Claim amendments were proposed to further distinguish the present invention over the prior art. The Examiner agreed to consider the suggested changes in this official Response.

CONCLUSION

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot and further, that all pending claims patentably distinguish over the prior art. There being no further outstanding objections or rejections, the application is submitted as being in condition for allowance, which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited and possibly concluded by the Examiner's contacting the undersigned attorney for a telephone interview to discuss any such remaining issues.

If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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